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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,397	11/25/2003	John Charles Autrey	00-010-DSX (STK 00010 PUS	1658
7590	07/15/2004		EXAMINER	
Timothy R. Schulte Storage Technology Corporation One StorageTek Drive, MS-4309 Louisville, CO 80028-4309			PARDO, THUY N	
			ART UNIT	PAPER NUMBER
			2175	

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/721,397	<b>Applicant(s)</b> AUTREY ET AL.	
	<b>Examiner</b> Thuy Pardo	<b>Art Unit</b> 2175	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/25/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's Application filed on November 25, 2004 has been reviewed.
2. Claims 1-20 are presented for examination.

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Claims 1-20 are rejected under the judicially created doctrine of double patenting over claims 1-6 accordingly of U. S. Patent No. 6,732,125 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent. Although the conflicting claims are not identical, they are not patentably distinct from each other

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because the context of the claimed invention is similar to the context of the cited claim of the U.S. patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: a method for backing up data using a self archiving log structured volume.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-20 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Deshayes et al.** (Hereinafter "Deshayes") U.S. Patent No. 6,047,294, in view of **Taylor** US Patent No. 6,490,598.

As to claim 1, Deshayes teaches the invention substantially as claimed, comprising the steps of:

a self archiving log structured volume for copying blocks from primary storage to backing storage [a segment of data, such as a virtual disk partition may be backed up from a primary storage device to a backup storage device, see the abstract; col. 7, lines 6-15];

an agent [host adapter, 72 of fig. 7] to indicate to the self archiving log structured volume when the blocks of the self archiving log structured volume are in a consistent state with respect to the storage application [col. 7, lines 55 to col. 8, lines 54, particular col. 7, lines 55 to col. 8, lines 7 and col. 8, lines 44-54]; and

primary and backup storage operable with the self archiving log structured volume to store the logged blocks and synch events of the self archiving log structured volume [col. 11, lines 66 to col. 12, lines 4; col. 12, lines 11-49].

However, Deshayes does not explicitly teach copying blocks from primary storage to backing storage while the storage application is running. Taylor teaches providing a nondisruptive backup operation and users continue access to the data storage system while backup occurs [col 4, lines 45-50].

Therefore, it would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to have modified the communication service system of Deshayes wherein the logical restore from a physical backup in a computer storage system provided thereof would have incorporated the teachings of Taylor especially the feature of providing a nondisruptive backup operation; the motivation

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being to expand and enhance the versatility of Deshayes's system by providing continuous availability of data access to users [see Taylor, col. 1, lines 31-44].

As to claim 2, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the self archiving log structured volume includes a log having a plurality of log segments and an index [col. 8, lines 31-35], the log segments including a current log segment and active log segments for storing blocks of an active volume, wherein the index shows the current position of each block in the log segments [col. 11, lines 19-30].

As to claim 3, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the self archiving log structured volume satisfies write block requests from the storage application by copying the written block to the end of the log and then updating the index with the current position of that block in the log [col. 5, lines 7-25; col. 11, lines 48-65; col. 14, lines 31-51].

As to claim 4, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the self archiving log structured volume satisfies a read block request by looking up the requested block in the index and then copying the requested block from the log [col. 6, lines 60 to col. 7, lines 15; col. 11, lines 19-30].

As to claim 5, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the self archiving log structured volume records a synch

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event by writing a special block to the log containing the date, time, and other information describing the synch event [inherent in the system in order to write information to the physical storage segments in a time period, col. 12, lines 19-21].

As to claim 6, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the self archiving log structured volume writes blocks to the current segment of the log and then converts the current segment to an active segment when the current segment is full [col. 5, lines 7-25].

As to claim 7, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the active segments of the log structured volume are in a time sequential order [col. 8, lines 30-35].

As to claim 8, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the segments of the log are of equal size [col. 2, lines 15-23; col. 6, lines 3-13].

As to claim 9, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the log further includes a plurality of inactive segments and a plurality of recycle segments [clean-up phase, col. 14, lines 41-51; col. 15, lines 61-63].

As to claim 10, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the self archiving log structured volume is operable to construct a volume index from any synch point by scanning backward in the log and



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updating the index entry for each block to the most recent position in the log [col. 3, lines 55-65].

As to claim 11, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the current segment and the active segments of the log make up a working set of segments having a fixed length from which all write request blocks are satisfied [inherent in the segment of storage, col. 6, lines 3-13].

As to claim 12, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the maximum length of the scan is the length of the working set of segments and one additional segment [col. 10, lines 40-58].

As to claims 13 and 15, all limitations of these claims are rejected in the analysis of claims 6 and 9 above, and these claims are rejected on that basis.

As to claim 14, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the inactive segments are compressed and archived by the self archiving log structured volume to the backing storage.

As to claim 16, Deshayes and Taylor teach the invention substantially as claimed. Deshayes further teaches that the size of each segment and the number of segments is determined by policy [col. 4, lines 26-33].

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As to claim 17, Deshayes and Taylor teach the invention substantially as claimed. Taylor further teaches that the self archiving log structured volume is operable to migrate inactive segments of the log to the backing storage [col. 5, lines 49-65].

As to claim 18, Deshayes and Taylor teach the invention substantially as claimed. Taylor further teaches that the self archiving log structured volume is operable to ensure that a volume can be reconstructed from a fixed number of log segments [col. 6, lines 5-29].

As to claims 19-20, all limitations of this claim have been rejected in the analysis of claim 1-18 above, and this claim is rejected on that basis.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy Pardo, whose telephone number is (703) 305-1091. The examiner can normally be reached Monday through Thursday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (703) 305-3830.

The fax phone number for the organization where this application or proceeding is assigned are as follows: (703) 872-9306 (Official Communication)

and/or:

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(703) 746-5616 (*Use this Fax#, only after approval by Examiner, for "INFORMAL" or "Draft" communication. Examiner may request that a formal/amendment be faxed directly to then on occasions*).

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

**6. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

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**or faxed to:**

(703) 308-9051, (for formal communications intended for entry)

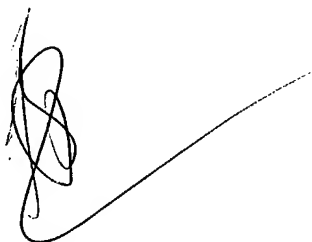
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Hand-delivered responses should be brought to Crystal Park II, 2121  
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July 09, 2004

A handwritten signature in black ink, consisting of a series of loops and a long, sweeping horizontal stroke extending to the right.

**THUY N. PARDO**  
**PRIMARY EXAMINER**